

WHAT IS CLAIMED IS:

1. A method comprising:

- (I) providing a composition;
- (II) applying the composition to a paper substrate; and
- (III) forming a paper coating on the paper substrate;

wherein the composition comprises a blend of polymers, wherein the blend of polymers comprises a vinyl aromatic-acrylic polymer and a vinyl aromatic-diene polymer, wherein the vinyl aromatic-acrylic polymer comprises a reaction product of a vinyl aromatic and an alkyl (meth)acrylate, and the vinyl aromatic-diene polymer comprises a reaction product of a vinyl aromatic and a conjugated diene, wherein, based on a solids weight of all polymers in the blend of polymers, the vinyl aromatic-acrylic polymer is present in the blend of polymers in an amount from 50% to about 95% and the vinyl aromatic-diene polymer is present in an amount from about 5% to 50%, wherein when the vinyl aromatic-acrylic polymer is present in the blend of polymers in an amount from 50% to 65%, the amount of vinyl aromatic in the vinyl aromatic-acrylic polymer is from about 5% to less than 20% by weight.

- 2. The method of claim 1, wherein, based on the total weight of the vinyl aromatic-diene polymer, the vinyl aromatic is present in an amount from about 40% to about 85%, and the conjugated diene is present in an amount from about 15% to about 60%.
- 3. The method of claim 1, wherein based on the total weight of the vinyl aromatic-alkyl (meth)acrylate polymer, the vinyl aromatic is present in an amount from about 5% to about 60%, and the alkyl (meth)acrylate is present in an amount from about 40% to about 95%.
- 4. The method of claim 1, wherein the alkyl (meth)acrylate is a C₁-C₁₂ (meth)acrylate.
- 5. The method of claim 1, wherein the alkyl(meth)acrylate is a C₄-C₁₂ (meth)acrylate.

6. The method of claim 1, wherein the vinyl aromatic-acrylic polymer comprises a reaction product of the vinyl aromatic, the alkyl (meth)acrylate, and at least one of an ethylenically unsaturated carboxylic acid and (meth)acrylonitrile.
7. The method of claim 1, wherein the vinyl aromatic-acrylic polymer consists of a reaction product of the vinyl aromatic, the alkyl (meth) acrylate, and at least one monomer selected from the group consisting of an ethylenically unsaturated carboxylic acid, (meth)acrylonitrile, and combinations thereof.
8. The method of claim 1, wherein the vinyl aromatic-acrylic polymer is at least one of a n-butyl acrylate-styrene polymer and a n-butyl acrylate-styrene-acrylonitrile polymer.
9. The method of claim 1, wherein the vinyl aromatic-diene polymer comprises a reaction product of the vinyl aromatic, the conjugated diene, and at least one of an ethylenically unsaturated carboxylic acid and (meth)acrylonitrile.
10. The method of claim 1, wherein the vinyl aromatic-diene polymer consists of a reaction product of the vinyl aromatic, the conjugated diene, and at least one monomer selected from the group consisting of an ethylenically unsaturated carboxylic acid, (meth)acrylonitrile, and combinations thereof.
11. The method of claim 1, wherein the vinyl aromatic-diene polymer is at least one of a styrene-butadiene polymer, a styrene-butadiene-acrylonitrile polymer, and a carboxylated styrene-butadiene polymer.
12. The method of claim 1, wherein the composition further comprises at least one of a surfactant, a wetting agent, a protective colloid, a filler, a coloring agent, an antiseptic, a biocide, a dispersing agent, a thickening agent, a thixotropic agent, an antifreezing agent, a pH adjusting agent, a corrosion inhibitor, an ultraviolet light stabilizer, a crosslinking promoter, and an antioxidants.
13. The method of claim 1, wherein the blend of polymers consists of the vinyl aromatic-acrylic polymer and the vinyl aromatic-diene polymer.